



**PATENT**  
Attorney Docket No. 168567/PALL

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

CONNORS et al.

Application No. 09/091,508

Art Unit: 1723

Filed: October 30, 1998

Examiner: M. Ocampo

For: **SEPARATION ARRANGEMENT**

**PENDING CLAIMS AFTER AMENDMENTS  
MADE IN RESPONSE TO OFFICE ACTION DATED JULY 19, 2002**

1. A separation element for separating one or more components from a fluid flowing through the separation element, the separation element comprising:

(a) two or more hollow pleated pack sections, each pack section having a plurality of pleats, wherein the plurality of pleats includes roots, crowns, legs extending between the roots and the crowns, an inner periphery at the roots defining an upstream side, and an outer periphery at the crowns defining a downstream side and wherein each pleat has a height  $h$  greater than  $(D-d)/2$  where  $D$  is the outer diameter at the outer periphery of the plurality of pleats and  $d$  is the inner diameter at the inner periphery of the plurality of pleats, a retainer disposed around the pleats, first and second ends, and a porous medium comprising a polymeric material or a glass fiber material;

(b) open joiner caps attached to at least one end of each of the two or more pack sections, adjacent open joiner caps being secured to coaxially connect the pack sections and open joiner caps into a hollow separation arrangement being at least about 40 inches in length and having an interior diameter of at least of about 2 inches; and

(c) first and second end caps attached to the hollow separation arrangement, wherein one of the first and second end caps comprises a seal having an outside diameter greater than the largest outside diameter of the hollow separation arrangement, the end caps including a polymeric or elastomeric material.

14. The separation element of claim 1 wherein each pack section includes a core disposed along the inner periphery of the pleats.

15. The separation element of claim 1 wherein each pack section is free of a core.

16. The separation element of claim 1 wherein the end cap having the seal comprises an open end cap including a substantially cylindrical configuration having an outer periphery and a channel circumferentially arranged in the outer periphery, the seal being positioned in the channel.
17. The separation element of claim 16 wherein each pack section is free of a core.
18. The separation element of claim 1 wherein the legs of the pleats are in intimate contact along substantially the entire height of the pleats.
19. The separation element of claim 1 wherein adjacent joiner caps are welded together.